S04P0383

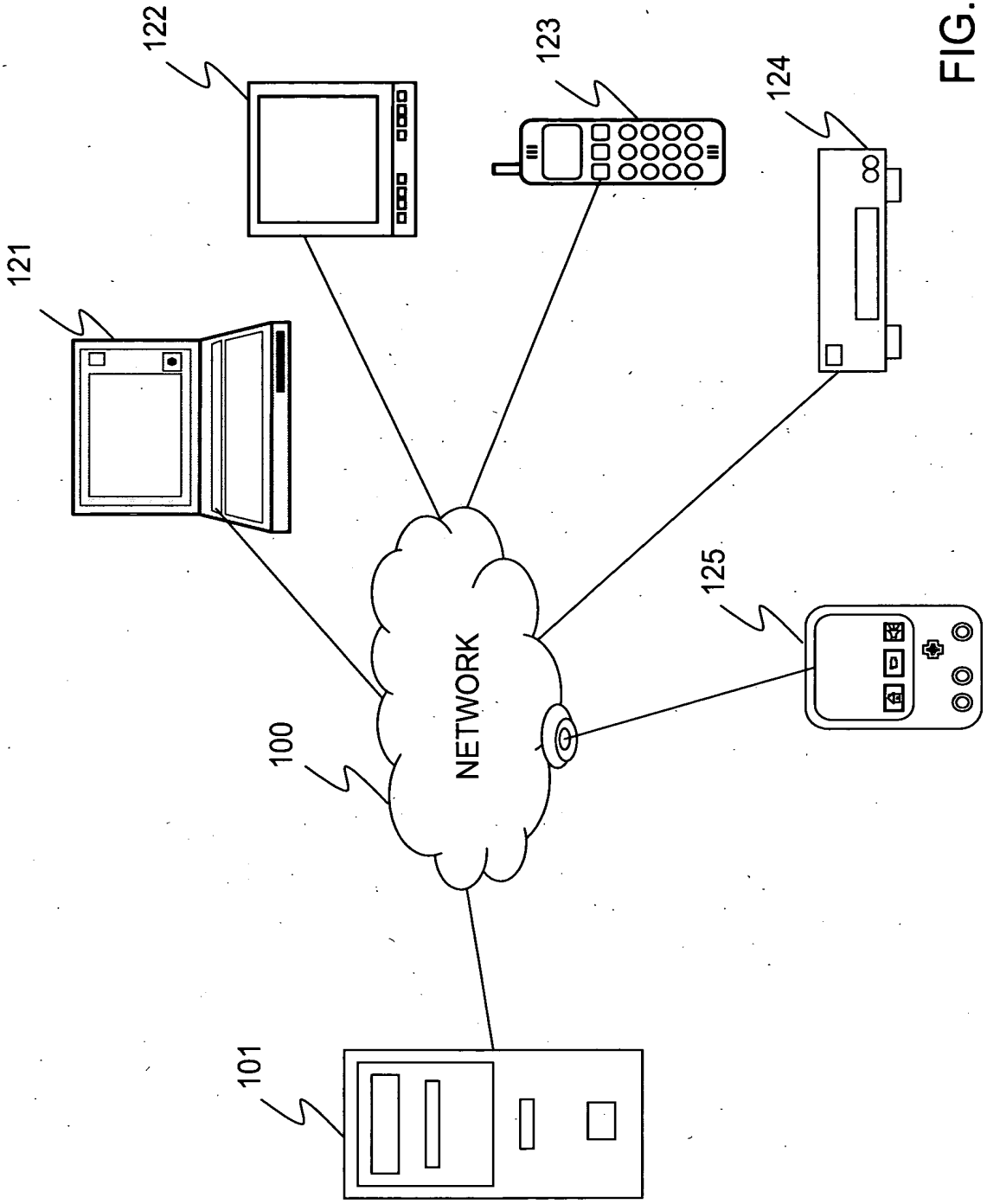


FIG. 1

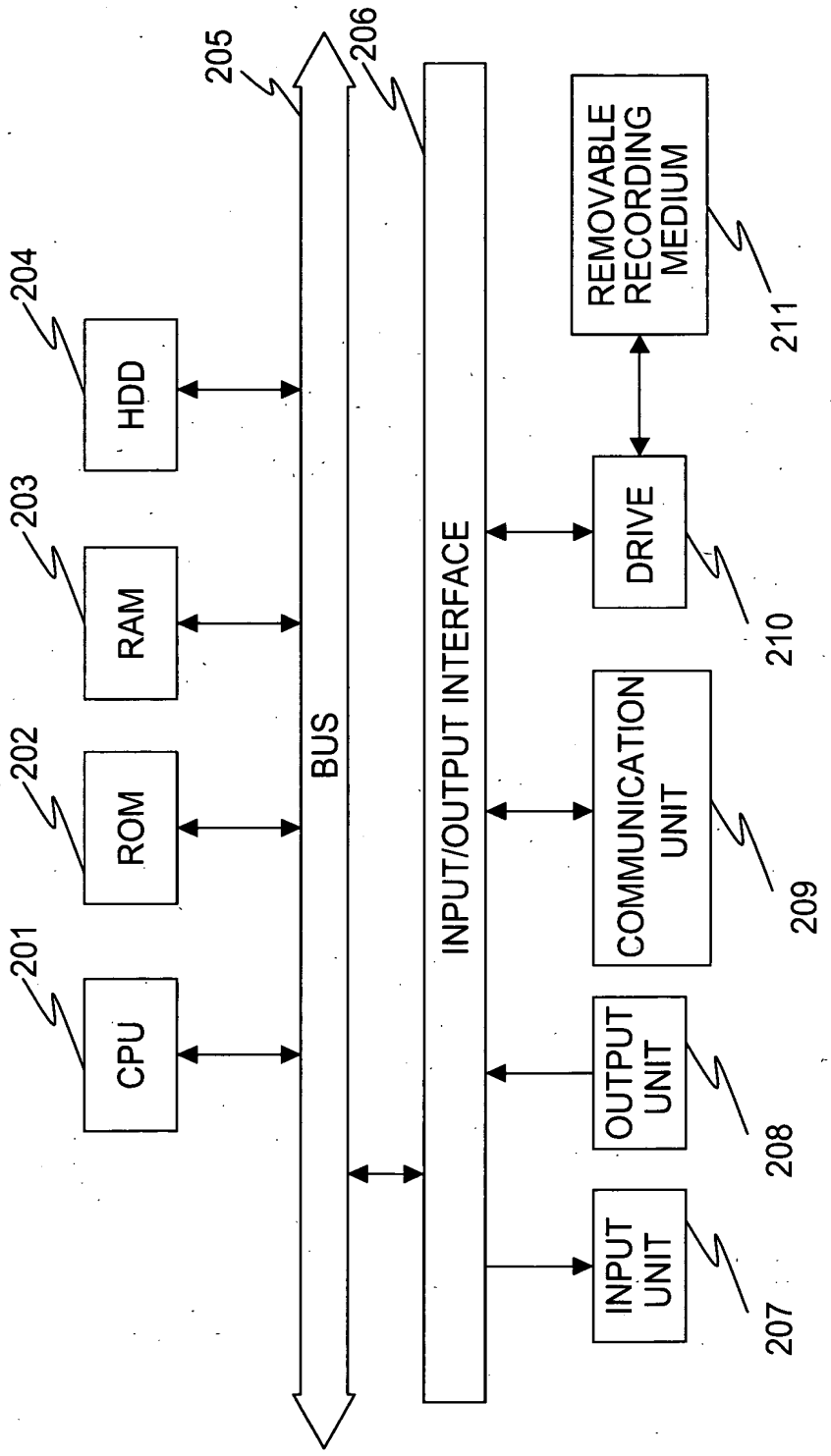

201
CPU
202
ROM
203
RAM
204
HDD
205
BUS
206
INPUT/OUTPUT INTERFACE
207
INPUT UNIT
208
OUTPUT UNIT
209
COMMUNICATION UNIT
210
DRIVE
211
REMOVABLE RECORDING MEDIUM

FIG. 2

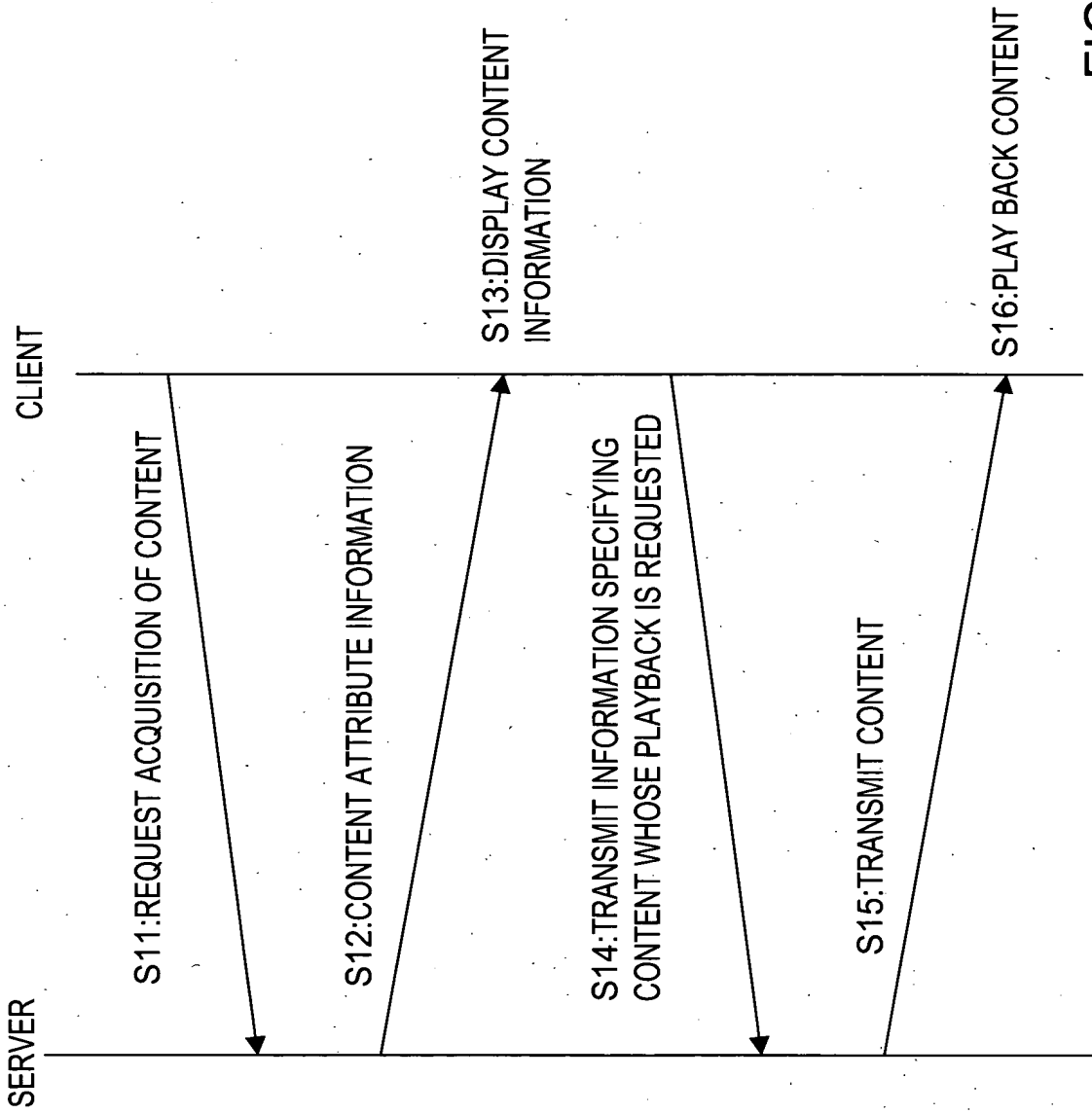

CLIENT
SERVER
S11:REQUEST ACQUISITION OF CONTENT
S12:CONTENT ATTRIBUTE INFORMATION
S13:DISPLAY CONTENT INFORMATION
S14:TRANSMIT INFORMATION SPECIFYING CONTENT WHOSE PLAYBACK IS REQUESTED
S15:TRANSMIT CONTENT
S16:PLAY BACK CONTENT

FIG. 3

Class Name	Description
avmusicTrack	Music
avMusicAlbum	Album It has avMusicTrack as a subclass.
avMusicGenre	Each genre of "List of Genres" It has auMusicArtist or avMusicAlbum or avMusicTrack as a subclass.
avMusicArtist	Each artist of "List of Artists" It has avMusicAlbum or avMusicTrack as a subclass.
avMusicPlaylist	Playlist in "List of Playlists" container It has, as a subclass, avMusicTrack, which is included in the playlist.
avMusicSearchav MusicSearch	Server-automatically-generated playlist in "Various Searches" It has, as a subclass, avMusicTrack, which is included in the playlist.
avMusicPlaylistFolder	Playlist container It has avMusicPlaylistFolder or avMusicPlaylist as a subclass. The reason that playlistContainer is not inherited is to avoid confliction with avMusicPlaylist in character-string matching.
avMusicAlbumCabinet	Album cabinet It has avMusicAlbum as a subclass.
avAllavAllMusicTracks	"All Pieces of Music" container avMusicTrack as a subclass
avAllavAllMusicAlbums	"List of Albums" container avMusicAlbum as a subclass
avAllavAllMusicArtists	"List of Artistis" container avMusicArtis as a subclass
avAllavAllMusicGenre	"List of Genres" container avMusicGenre as a subclass
avAllavAllMusicPlaylists	"List of Playlists" container avMusicPlaylist or avMusicPlaylistFolder as a subclass
avAllMusicSearch	"Various Searches" container avMusicSearchavMusicSearch as a subclass
avAllMusicAlbumCabinets	"List of Album Cabinets" container avMusicAlbumCabine as a subclass

FIG. 4

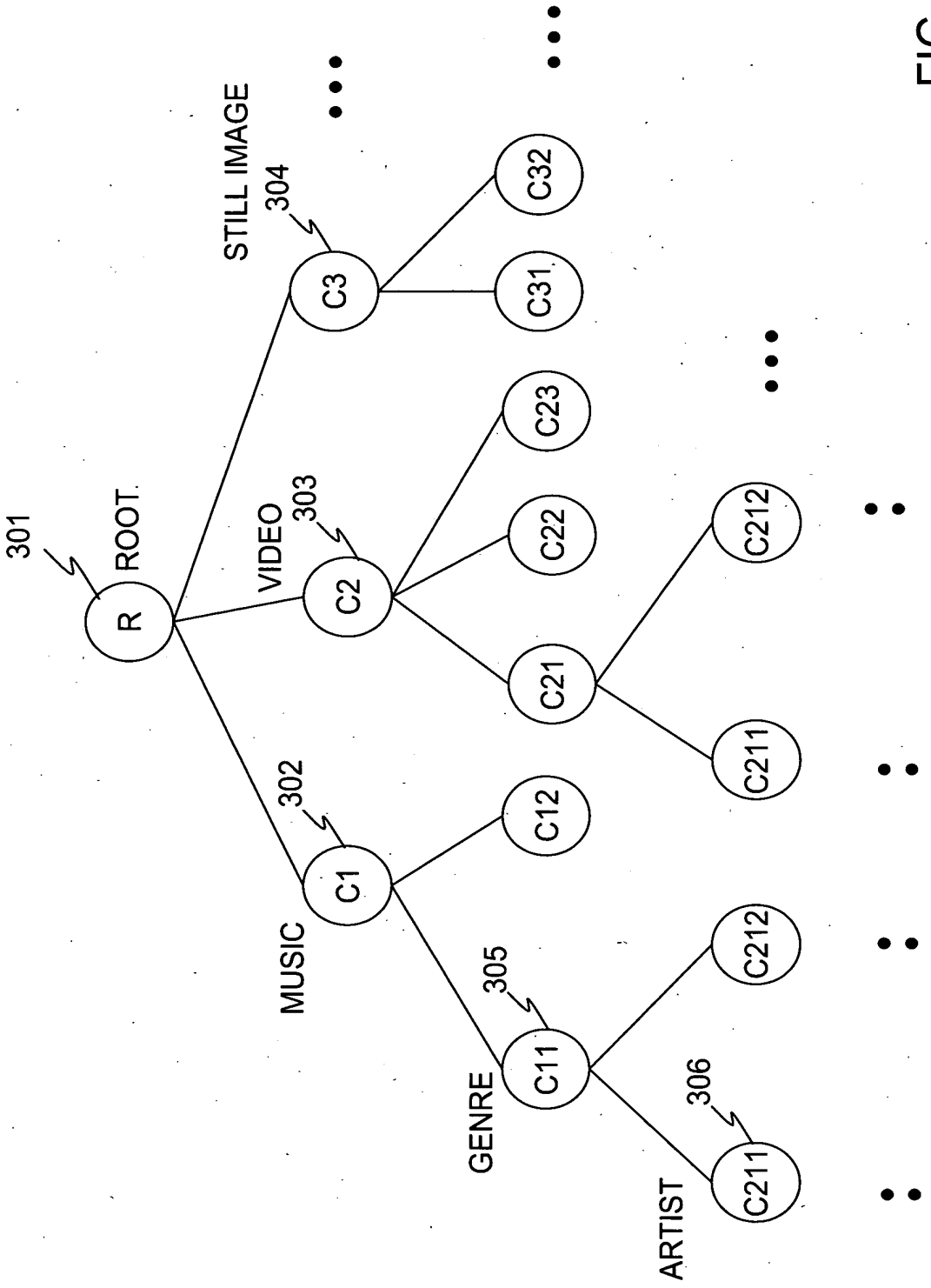

301
ROOT
R
MUSIC
302
C1
VIDEO
303
C2
STILL IMAGE
304
C3
GENRE
305
C11
ARTIST
306
C211
C12
C21
C22
C23
C31
C32
C212
C211
C212

FIG. 5

FIG. 6

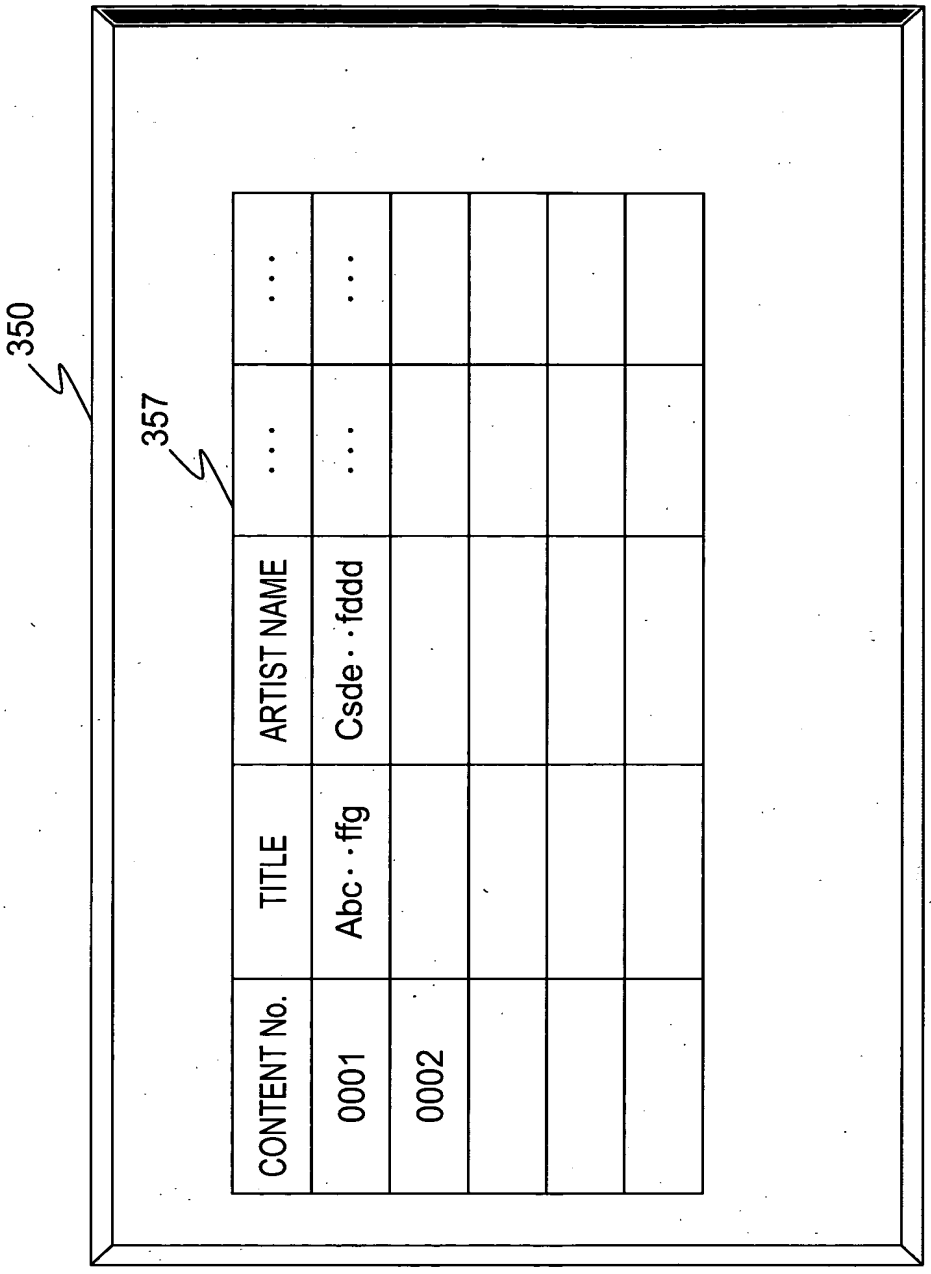
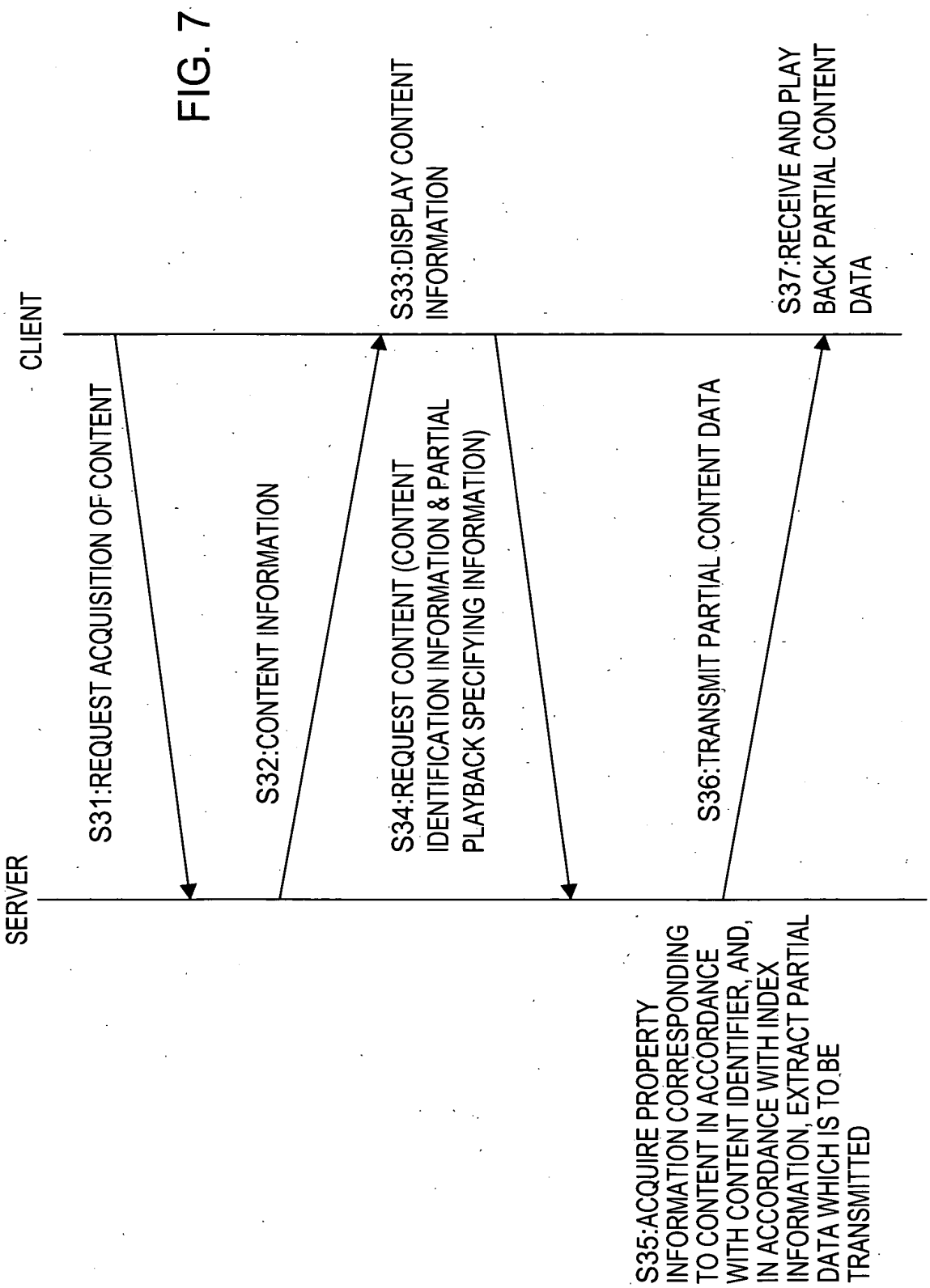

350
357
CONTENT No.
TITLE
ARTIST NAME
0001
Abc · · ffg
Csde · · fddd
0002
· · ·
· · ·

FIG. 7


CLIENT
SERVER
S31:REQUEST ACQUISITION OF CONTENT
S32:CONTENT INFORMATION
S33:DISPLAY CONTENT INFORMATION
S34:REQUEST CONTENT (CONTENT IDENTIFICATION INFORMATION & PARTIAL PLAYBACK SPECIFYING INFORMATION)
S35:ACQUIRE PROPERTY INFORMATION CORRESPONDING TO CONTENT IN ACCORDANCE WITH CONTENT IDENTIFIER, AND, IN ACCORDANCE WITH INDEX INFORMATION, EXTRACT PARTIAL DATA WHICH IS TO BE TRANSMITTED
S36:TRANSMIT PARTIAL CONTENT DATA
S37:RECEIVE AND PLAY BACK PARTIAL CONTENT DATA

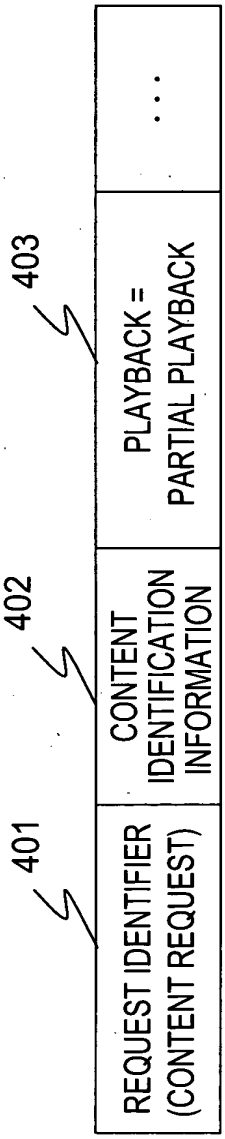

401
REQUEST IDENTIFIER (CONTENT REQUEST)
402
CONTENT IDENTIFICATION INFORMATION
403
PLAYBACK = PARTIAL PLAYBACK
...

FIG. 8

Property Name	Type	Multiple	Property Description
av:totalSize	unsigned long	no	Size (original size) of resources included in a container. It may be even an approximate value. Byte unit.
av:totalDuration	duration	no	Total time of resources included in a container. It may be even an approximate value.
av:recordQualityLevel	integer	no	Quality level of content. {1,2,3,4,5,6,7} In the case of video, 3: 2 Mbps; 4: 4 Mbps; 5: 8 Mbps for standard. The values are not strictly set. When quality levels of plural res's differ, the highest level is set. (For each res, res@av:recordQualityLevel is set)
index-start-position information av:indexStartPosition	duration	no	Positional information of partial data (impressive portion). (temporal position or data position from content-start position)
index-region information av:indexDuration	duration	no	Region information of partial data (impressive portion). (temporal or data-region information from index-start position)

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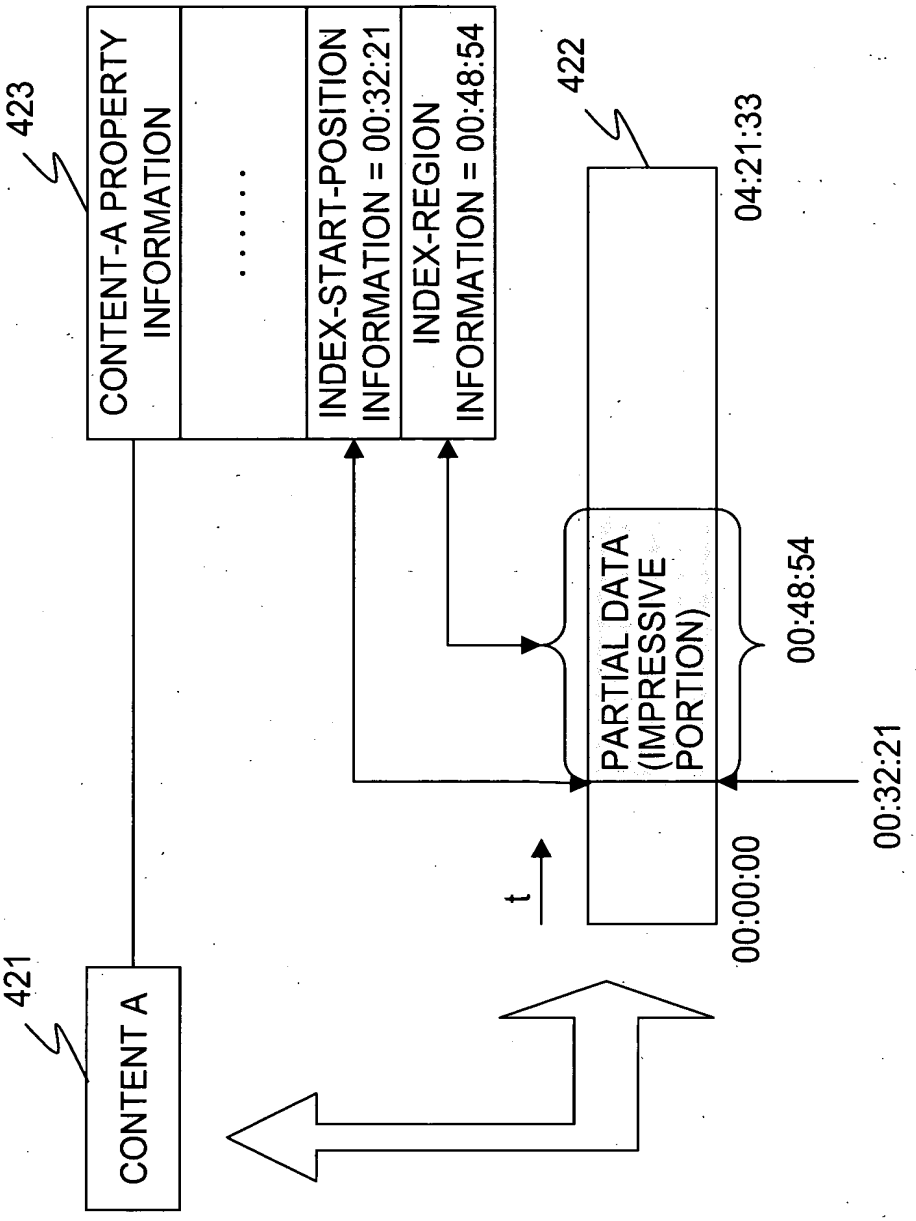
FIG. 9

10/550510

FIG. 10


421
CONTENT A
423
CONTENT-A PROPERTY INFORMATION
.....
INDEX-START-POSITION INFORMATION = 00:32:21
INDEX-REGION INFORMATION = 00:48:54
422
04:21:33
PARTIAL DATA (IMPRESSIVE PORTION)
00:48:54
00:32:21
00:00:00
t

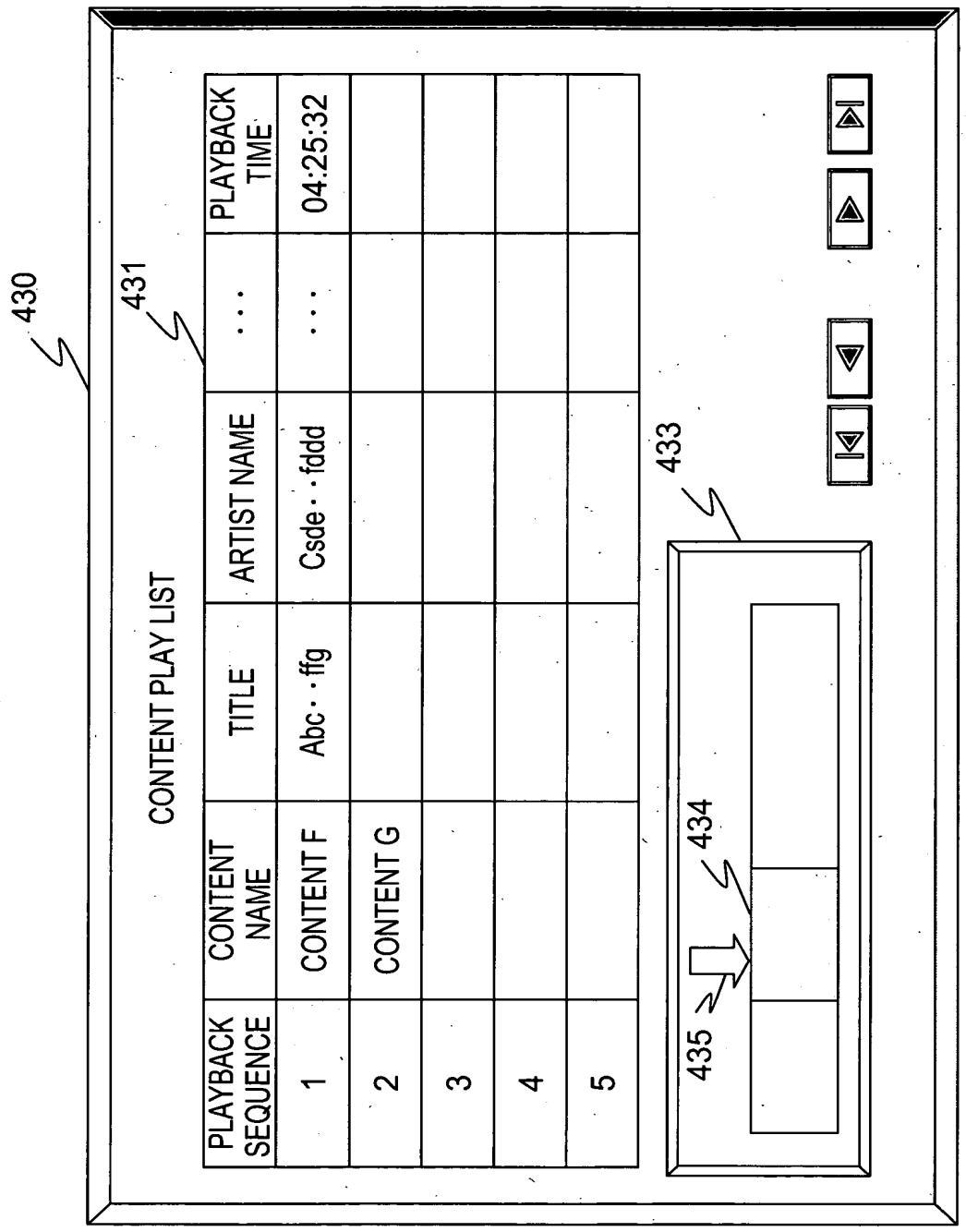

430
431
CONTENT PLAY LIST
PLAYBACK SEQUENCE
CONTENT NAME
TITLE
ARTIST NAME
...
PLAYBACK TIME
1
CONTENT F
Abc· ·ffg
Csde· ·fddd
...
04:25:32
2
CONTENT G
3
4
5
433
434
435

FIG. 11

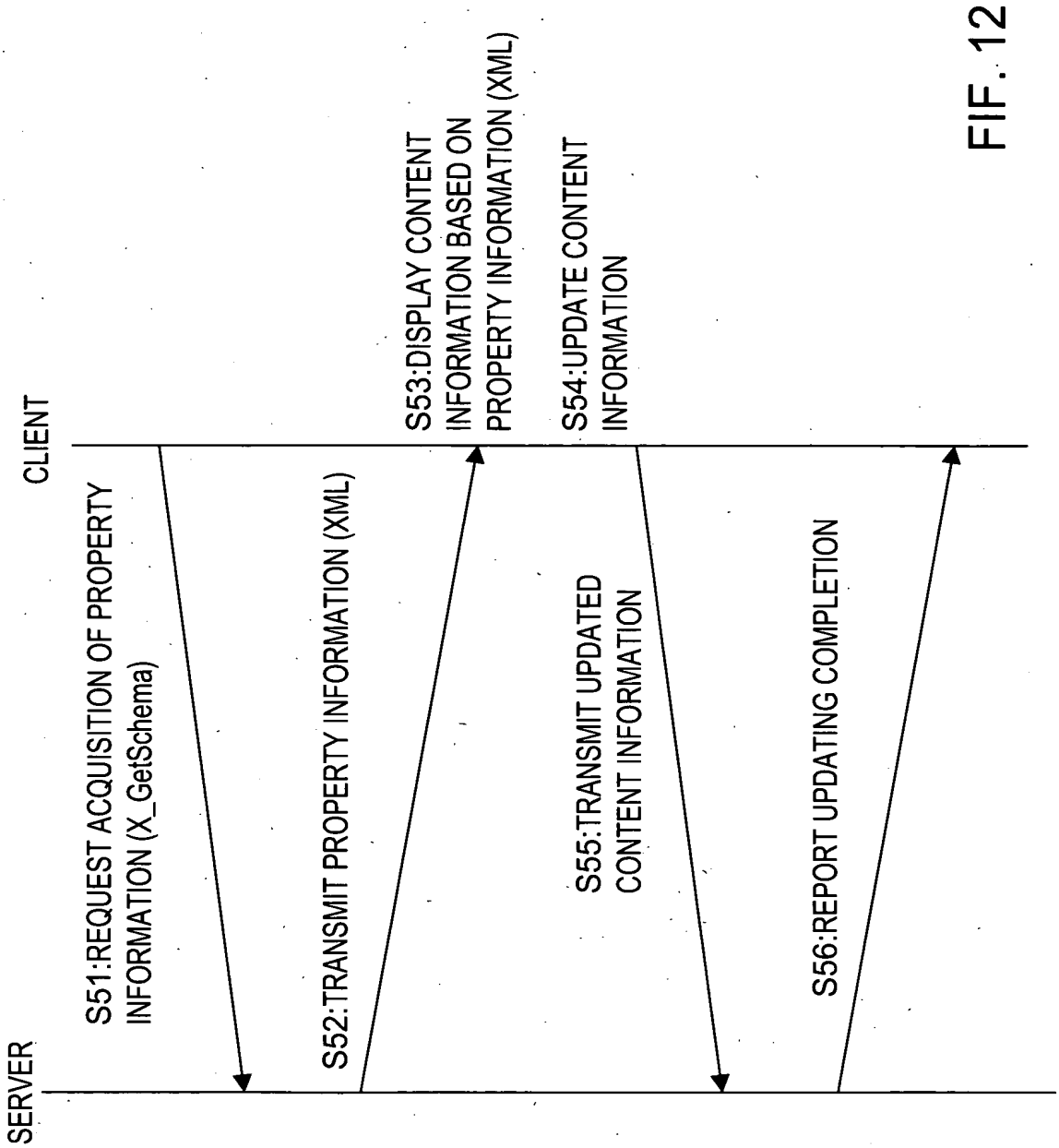

CLIENT
SERVER
S51:REQUEST ACQUISITION OF PROPERTY INFORMATION (X_GetSchema)
S52:TRANSMIT PROPERTY INFORMATION (XML)
S53:DISPLAY CONTENT INFORMATION BASED ON PROPERTY INFORMATION (XML)
S54:UPDATE CONTENT INFORMATION
S55:TRANSMIT UPDATED CONTENT INFORMATION
S56:REPORT UPDATING COMPLETION

FIG. 12

```
<?xml version="1.0">
<av:PropertiesInfo xmlns:av ="urn:schemas-sony-com:av">
    <av:PropertyInfo>                                                    471
      <av:PropertyName>dc:title</av:PropertyName>
      <av:MinOccurred>1</av:MinOccurred>
      <av:MaxOccurred>1</av:MaxOccurred>
      <av:OperationCode>rcw</av:OperationCode>
    </av:PropertyInfo>
    ...
    <av:PropertyInfo>                                                    472
      <av:PropertyName>upnp:artist</av:PropertyName>
      <av:MinOccurred>0</av:MinOccurred>
      <av:MaxOccurred>1</av:MaxOccurred>
      <av:OperationCode>rcwad</av:OperationCode>
    </av:PropertyInfo>
    ...
    <av:PropertyInfo>                                                    473
      <av:PropertyName>av:recordQualityLevel</av:PropertyName>
      <av:MinOccurred>1</av:MinOccurred>
      <av:MaxOccurred>1</av:MaxOccurred>
      <av:OperationCode>rcw</av:OperationCode>
      <av:AllowedValueRange>
                <av:Minimum>3</av:Minimum>
                <av:Maximum>5</av:Maximum>
                <av:Step>1</av:Step>
      </av:AllowedValueRange>
    </av:PropertyInfo>
    ...
    <av:PropertyInfo>                                                    474
      <av:PropertyName>av:recordStatus</av:PropertyName>
      <av:MinOccurred>1</av:MinOccurred>
      <av:MaxOccurred>1</av:MaxOccurred>
      <av:OperationCode>r</av:OperationCode>
      <av:AllowedValueList>
                <av:AllowedValue>NotYet</av:AllowedValue>
                <av:AllowedValue>Timed</av:AllowedValue>
                <av:AllowedValue>Recording</av:AllowedValue>
                <av:AllowedValue>Recorded</av:AllowedValue>
      </av:AllowedValueList>
    </av:PropertyInfo>
    ...
</av:PropertiesInfo >
```

FIG. 13

av:PropertyName	string	dc:title	Property name (write for each namespace, such as SortCriteria)
av:MinOccurred	unsigned integer	1	In the server, regarding one object in the specified class, the minimum number of properties that must exist.
av:MaxOccurred	unsigned integer	1	In the server, regarding one object in the specified class, the maximum number of properties that can exist. No limit causes no tag.
av:OperationCode	formatted string	rwc	Among the following characters, corresponding characters are arranged: c: Specifiable in CreateObject mode w: Rewrittable with UpdateObject a: Increasable with UpdateObject d: Erasable with UpdateObject s: Includable in SortCriteria with Browse/Search
av:AllowedValueList	-	-	Specified when a list of possible values of the property. No limit in possible values both in AllowedValueRange and this property. When the type of property is CSV, patterns are listed one by one, and all the patterns do not need to be listed. The values are listed as values of AllowedValue.
av:AllowedValue	depends on property	PLAY	Possible value
av:AllowedValueRange	-	-	Specified when some limitation lies in the range of possible value of the property. No limit in possible values both in AllowedValueList and this property. The range
av:Minimum	depends on property	1	The minimum value of the property. No minimum value needs no tag.
av:Maximum	depends on property	1	The maximum value of the property. No maximum value needs no tag.
av:Step	depends on property	1	If a possible value is determined at predetermined intervals, the interval is shown here. If not, no tag is used.

FIG. 14

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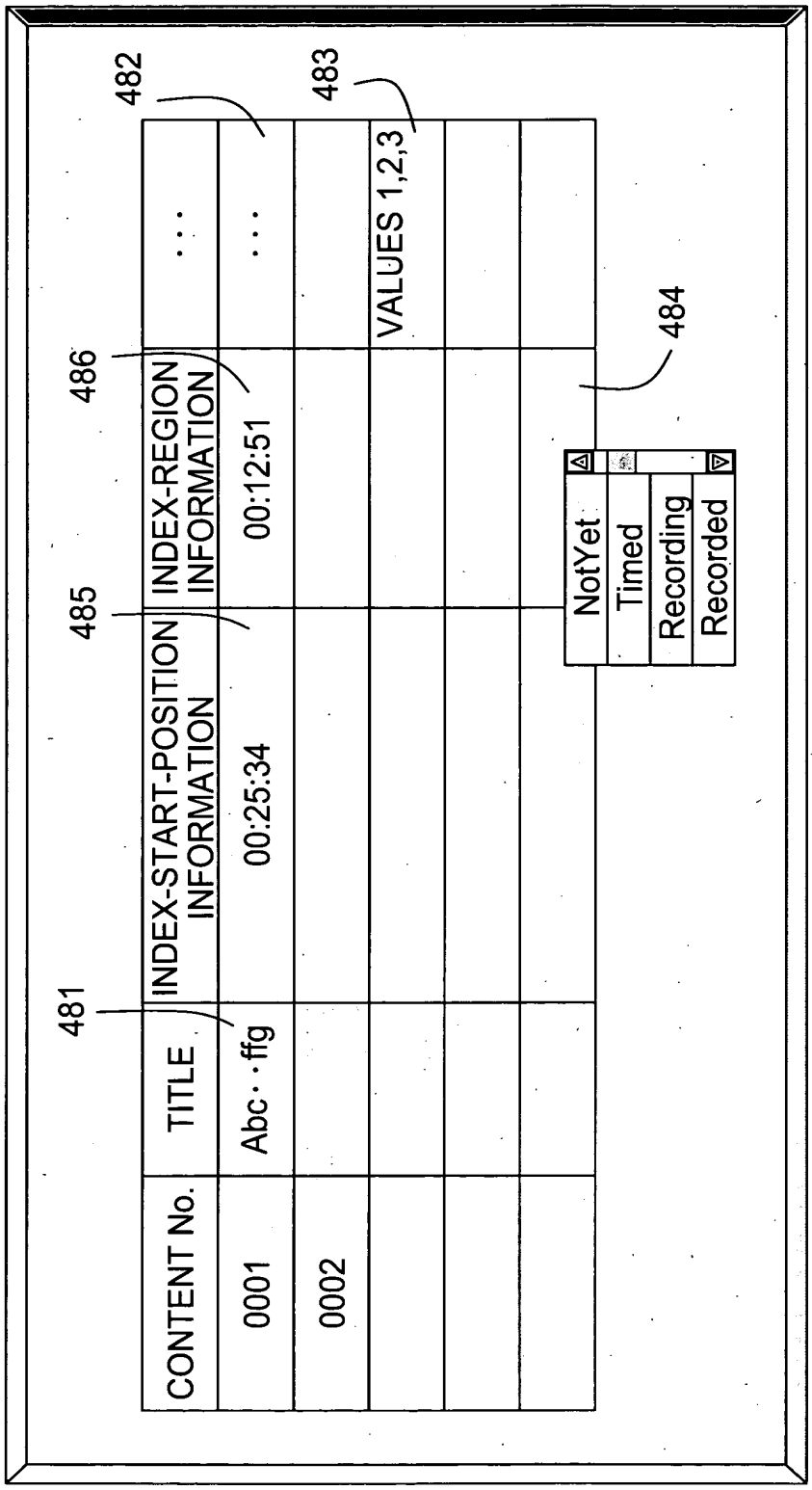


FIG. 15

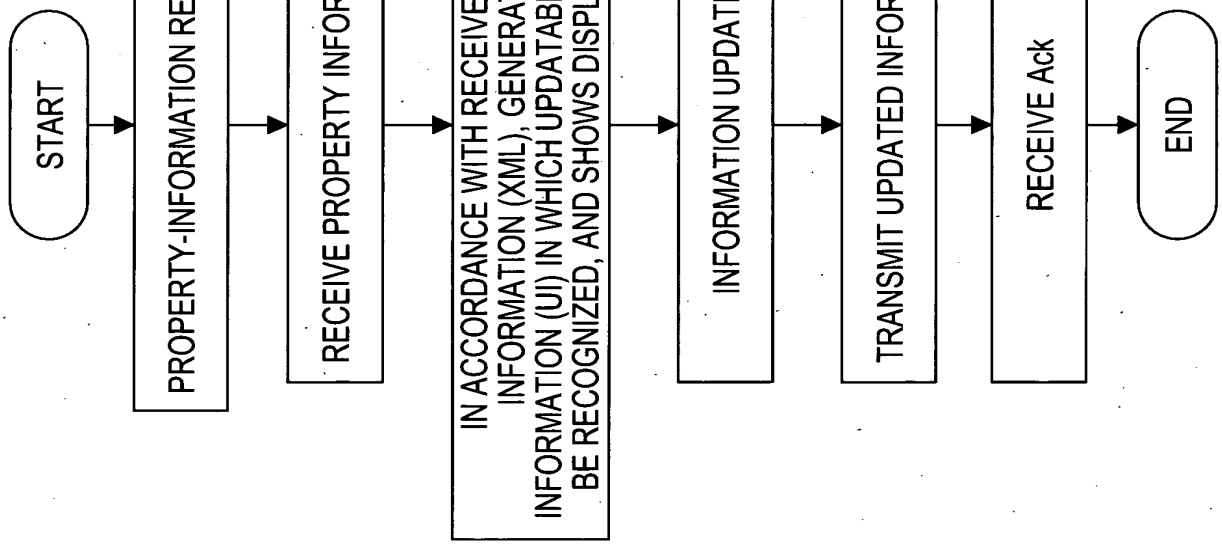
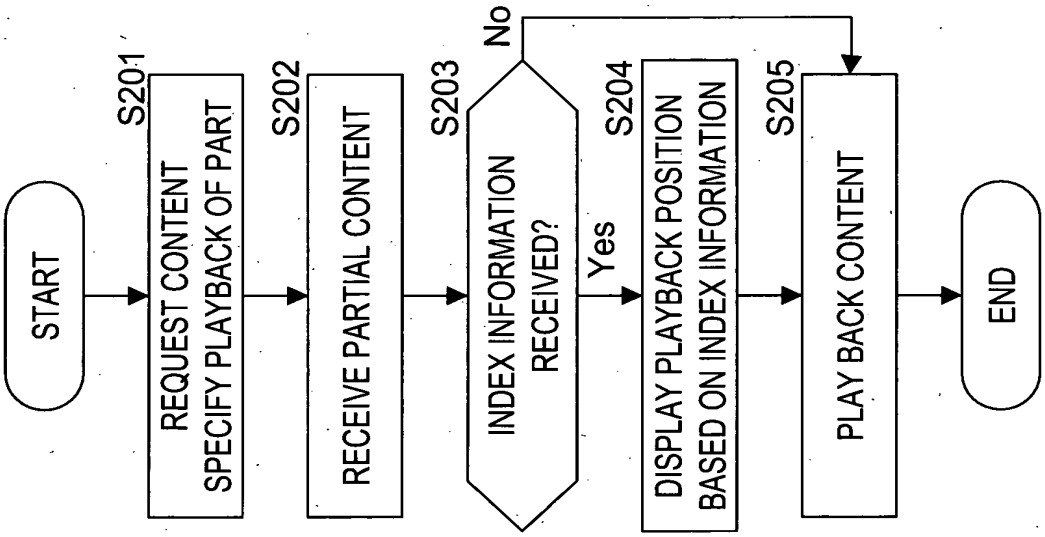

START
S111
PROPERTY-INFORMATION REQUESTING
S112
RECEIVE PROPERTY INFORMATION
S113
IN ACCORDANCE WITH RECEIVED PROPERTY INFORMATION (XML), GENERATE DISPLAY INFORMATION (UI) IN WHICH UPDATABLE FORM, ETC., CAN BE RECOGNIZED, AND SHOWS DISPLAY INFORMATION
S114
INFORMATION UPDATING
S115
TRANSMIT UPDATED INFORMATION
S116
RECEIVE Ack
END

FIG. 16

FIG. 17


START
S201
REQUEST CONTENT SPECIFY PLAYBACK OF PART
S202
RECEIVE PARTIAL CONTENT
S203
INDEX INFORMATION RECEIVED?
No
Yes
S204
DISPLAY PLAYBACK POSITION BASED ON INDEX INFORMATION
S205
PLAY BACK CONTENT
END

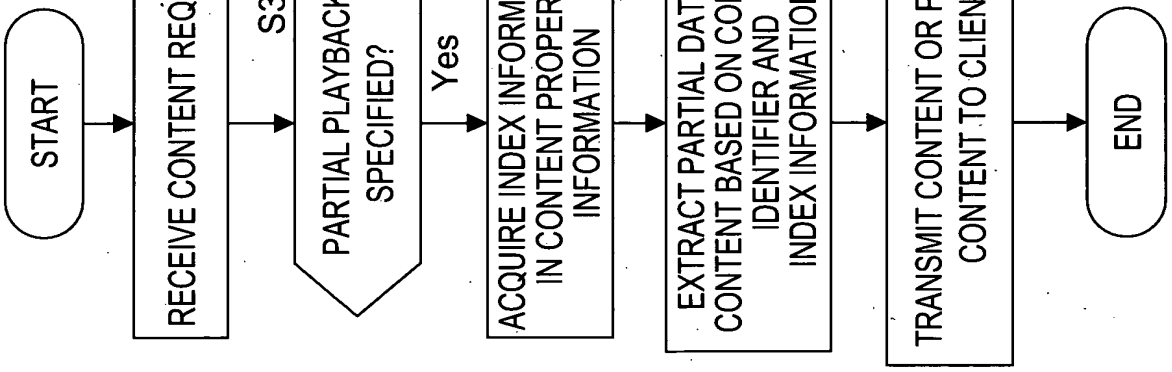

START
S301
RECEIVE CONTENT REQUEST
S302
PARTIAL PLAYBACK SPECIFIED?
No
Yes
S311
ACQUIRE CONTENT BASED ON CONTENT IDENTIFIER
S303
ACQUIRE INDEX INFORMATION IN CONTENT PROPERTY INFORMATION
S304
EXTRACT PARTIAL DATA OF CONTENT BASED ON CONTENT IDENTIFIER AND INDEX INFORMATION
S305
TRANSMIT CONTENT OR PARTIAL CONTENT TO CLIENT
END

FIG. 18

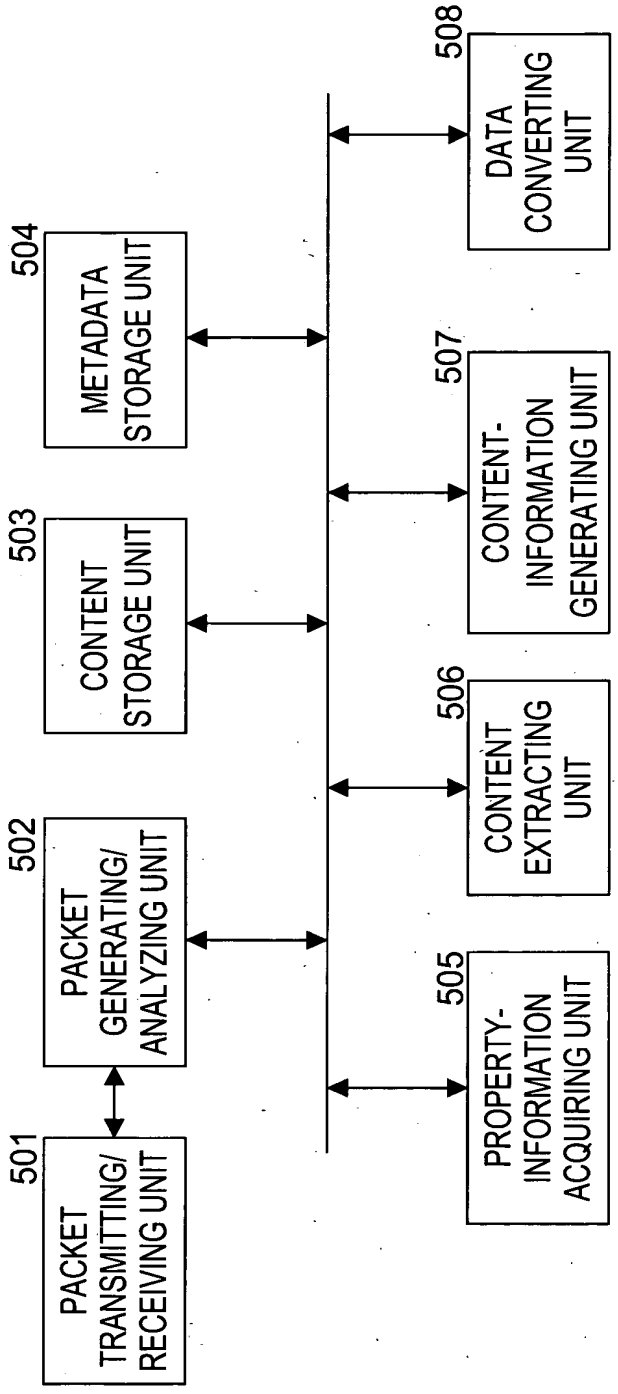

501
PACKET TRANSMITTING/ RECEIVING UNIT
502
PACKET GENERATING/ ANALYZING UNIT
503
CONTENT STORAGE UNIT
504
METADATA STORAGE UNIT
505
PROPERTY-INFORMATION ACQUIRING UNIT
506
CONTENT EXTRACTING UNIT
507
CONTENT-INFORMATION GENERATING UNIT
508
DATA CONVERTING UNIT

FIG. 19

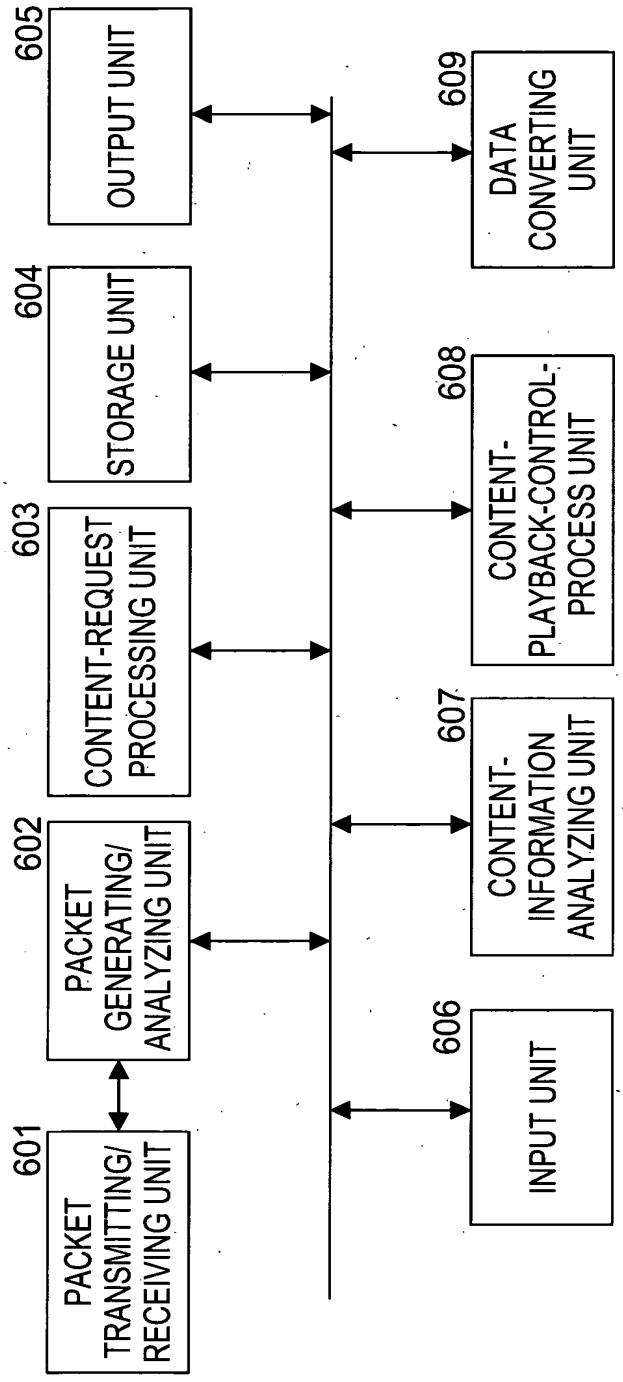

601
PACKET TRANSMITTING/ RECEIVING UNIT
602
PACKET GENERATING/ ANALYZING UNIT
603
CONTENT-REQUEST PROCESSING UNIT
604
STORAGE UNIT
605
OUTPUT UNIT
606
INPUT UNIT
607
CONTENT-INFORMATION ANALYZING UNIT
608
CONTENT-PLAYBACK-CONTROL-PROCESS UNIT
609
DATA CONVERTING UNIT

FIG. 20